

ABSTRACT OF THE DISCLOSURE

A semiconductor device has: a gate insulator film of a transistor formed in a predetermined region on a region of a first conductivity type; a gate electrode of the transistor formed on the gate insulator film; a diffusion layer of a second conductivity type formed on both sides of the gate insulator film on the region of the first conductivity type; and a diffusion layer of the first conductivity type formed on the region of the first conductivity type so as to surround the gate insulator film and the diffusion layer of the second conductivity type. The diffusion layer of the first conductivity type has a higher impurity concentration than the region of the first conductivity type. In such a semiconductor device, the diffusion layer of the first conductivity type is formed so as to be separated from the gate insulator film. Consequently, it is the region of the first conductivity type having a lower concentration than the diffusion layer of the first conductivity type that forms a PN junction with the inversion layer in the channel region formed when the transistor is on (the inversion layer of the second conductivity type below the gate insulator film), so that the energy barrier of the PN junction is higher than that of the conventional PN junction of the diffusion layer of the first conductivity type and the inversion layer of the second conductivity type. As a result, leakage current generation is suppressed.